

## SPATIAL LIGHT MODULATOR

## ABSTRACT OF THE DISCLOSURE

A modulator formed with a solid state electro-optic material having a pixellated structure interconnected to a circuit on a semiconductor substrate.

- 5        Silicon CMOS integrated circuit that can include random access memories (RAMs) are used as a substrate and interfaced to solid state electro-optic materials coated thereon. In particular, the electro-optic modulators are controlled by RAM cells to produce a modulation of reflected light. SRAMs can be used with connection to the SRAM cell flip-flop. DRAMs can be used with the modulator replacing the DRAM
- 10    storage capacitor. The SLM thus formed can be connected to a digital computer and controlled as if were a being written to as a memory, but other IC structures can also be used. In order to enhance the modulation effects, the electro-optic material is used as the spacer for a Fabry-Perot etalon structure that is also deposited on the semiconductor substrate. PLZT is a suitable electro-optic material.

0071587-14700